Open-Ended Attributions in Team Competition

By: Diane L. Gill, M. Karen Ruder, and John B. Gross

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Abstract:
A total of 352 open-ended attributions were obtained in two field studies with volleyball teams and in two lab experiments, all involving team competition. All attributions were classified along the three causal dimensions of locus of causality, stability, and controllability. Attributions were also classified as referring to the self, to teammates, to the team as a whole, or to other factors and sorted into specific categories. A loglinear analysis revealed that attributions were predominantly internal, unstable, and controllable. A significant win/loss effect reflected the tendency for members of winning teams to use controllable, and particularly unstable, controllable, attributions more than members of losing teams. Overwhelmingly, attributions referred to the team as a whole rather than to individuals or other factors, and teamwork was an especially popular causal explanation. The findings suggest that research on attributions in team competition should focus on causal dimensions rather than the four traditional attributions of effort, ability, luck, and task difficulty, and that further attention should be given to team-referent causal explanations.

Article:
Investigations of success/failure attributions have been quite popular in the sport psychology literature and most of these sport attribution studies have drawn upon the theoretical work of Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971). In that original work, Weiner and his colleagues identified the four standard causal attributions of ability, effort, luck, and task difficulty and proposed a two- dimensional classification system with attributions classified as internal (ability and effort) or external (luck and task difficulty) and as stable (ability and task difficulty) or unstable (effort and luck). A number of predictions and relationships regarding achievement behavior emanate from that model, but to date, investigations of the implications for sport behavior are limited.

The conventional research paradigm for sport attribution studies involves the assessment of postcompetition win/loss attributions by asking respondents to rate the importance of ability, effort, luck, and task difficulty. A number of studies using this approach have found that winners are more internal in their causal attributions than losers (Bird & Brame, 1978; Forsyth & Schlenker, 1977; Iso-Ahola, 1975, 1977; Lau & Russell, 1980; Roberts, 1975, 1978), and this trend is generally interpreted as a self-serving or egocentric bias. Several studies, however, suggest that even losers give predominantly internal attributions (Lau & Russell, 1980; Scanlan & Passer, 1980), and other investigators report that losers are actually more internal in their attributions than winners (Gill, 1980; Scanlan, 1977). The discrepant findings may reflect inadequate assessment of respondents' attributions and overreliance on a restricted attributional research paradigm.

Despite sport psychology researchers' proclivity for Weiner's model and the four standard attributions, recent evidence indicates the inadequacy of that restricted approach for sport investigations. Weiner himself (Weiner, 1979; Weiner, Russell, & Lerman, 1978) has clearly stated that the four traditional attributions are not the only perceived causes of success or failure. In any achievement situation, other perceived causes may be equally or even more important. Researchers should consider the situation and investigate appropriate attributions.

The findings of recent sport attribution studies support Weiner's admonitions. In an investigation of causal elements used in sport situations, Roberts and Pascuzzi (1979) noted that the four traditional attributions were

used only 45% of the time. Bukowski and Moore (1980), using several alternative attributions along with the standard four, noted that while ability and effort were among the causes perceived as important, luck and task difficulty were not. They further suggested that more than the traditional reasons of ability, effort, luck, and task difficulty should be considered to adequately assess attributions for success/failure in athletics.

Not only may success/failure in sport situations prompt different causal explanations than success/failure in other achievement situations, but group competition, a typical sport setting, likely elicits even more diverse attributions. The individual's relationship to teammates and the interplay of individual and team goals and responsibilities may prompt complex attribution patterns. Furthermore, if the achievement behaviors of the group are of concern, the investigation of attribution patterns and cognitive processes within groups is a logical approach. Just as the cognitive approach and attribution research have added to our understanding of individual achievement behavior, a cognitive approach may prove valuable in examining group achievement behavior.

Indeed, the sport psychology research on group attributions indicates some differences between team and individual attributions even though that research seldom strays from the assessment of ability, effort, luck, and task difficulty. Generally the findings indicate that attributions for group success/failure are team-centered rather than self-centered. Iso-Ahola (1977) reported that team failure decreased the evaluation of team ability and effort but not individual evaluations. Discriminant analysis results of Bird and Brame's (1978) investigation indicated that three of the four attributions that discriminated between winning and losing teams were team attributions, with team ability being the most powerful discriminator. Gill (1980) observed that attributions of group success/failure to the own team or opponents were egocentric but assignment of responsibility within the team revealed a reverse- egocentric pattern, and she interpreted these findings as reflecting a team-enhancing bias.

The predominance of team-centered causal explanations in the group attribution studies and the implication that assessment of the four traditional causal factors is inadequate for sport attribution research prompted the current investigation. With the exception of Lau and Russell's (1980) investigation of attributional statements in newspaper reports of professional baseball and football games, researchers have not attempted to identify the specific causal explanations used by team sport participants. Thus, an exploratory investigation of win/loss attributions in team competition seemed reasonable. Open-ended attributions were obtained from members of winning and losing teams in two field studies and two lab experiments. As Elig and Frieze (1975, 1979) have noted, the open-ended format is especially appropriate for exploratory investigations and as a first step toward determining the relevant causal factors in a particular achievement situation.

Ultimately, sport attribution research must go beyond the descriptive identification of causal factors to examine the theoretical and practical implications of varying attributions. Within the Weiner model, theoretical predictions and relationships depend on the causal dimensions rather than specific attributions. In the original model (Weiner et al., 1971), attributions were classified in terms of locus of causality or internality (within the person or external) and stability (varying over time or not). More recently, attribution theorists (Elig & Frieze, 1975; Weiner, 1979) have advocated inclusion of a third dimension of controllability, with attributions classified as under volitional control or not. The locus of causality, stability, and controllability dimensions relate to self-esteem, expectancy, and evaluation by others, respectively, and these relationships have implications for achievement behaviors. Thus, attributions obtained in the current study were classified along the three causal dimensions of locus of causality, stability, and controllability.

Two major research questions were examined within the study; first, what types of causal explanations are given in team competition, and second, do the attributions of winning and losing team members differ? Because the study was exploratory, specific directional hypotheses were not examined either in terms of specific attributions or causal dimensions. In light of previous research, though, members of winning teams were expected to give more internal attributions than members of losing teams.

Method

Subjects
A total of 352 open-ended attributions were obtained from four separate samples, two field studies and two lab experiments. In all cases, respondents completed the attribution items immediately following team competition.

The first field study included 94 women on 16 intramural volleyball teams, and 68 athletes on 6 women's intercollegiate volleyball teams participated in the second field study. Both lab experiments involved two-person groups competing on the motor maze task. Experiment 1 included 64 college females and Experiment 2 included both males *(n* = 32) and females *(n* = 32); all participants in both experiments were volunteers from an undergraduate kinesiology class.

Procedures
Intramural volleyball teams were contacted by letter prior to the beginning of the season to solicit their cooperation in the study. The attribution questionnaire was administered at courtside immediately following a match during the fourth week of play (midseason). Because teams were playing each other, the number of winning team members *(n* = 46) and losing team members *(n* = 49) was nearly equal.

All intercollegiate teams in the second field study were competing at an invitational tournament approximately one-third of the way into the competitive season. Teams were contacted by letter prior to the tournament and six of the eight teams agreed to participate in the study. The attribution questionnaires were completed at courtside immediately after a pool play match, and again, the number of winning *(n* = 35) and losing *(n* = 30) team members was approximately equal.

The first lab experiment included two separate testing sessions, both involving competition between two groups. Participants remained with the same partners but competed with different opposing teams in each session. In the first session, the group maze task was a cooperative task with each team member using one handle of the maze. When the two handles were used together, the board could be tilted to move a steel ball around the maze as quickly as possible. In the second session, each person had her own maze task and the group score was the sum of the two individual times. In both sessions the two teams performed 20 trials of the group task in separate, adjoining rooms with the experimenter in a third adjoining room. Win/loss was manipulated by providing bogus team times through earphones after each trial so that each team won (won 15, 16, or 17 of 20 trials) in one session and lost in the other session.

Experiment 2 included only the cooperative group task. Each two-person group was randomly assigned to the winning (win 16 of 20 trials) or losing condition and scheduled for competition with an opposing group of the same sex. Again, the win/loss ratio was manipulated by the experimenter, but bogus times were provided via digital clocks rather than with earphones. In both sessions of Experiment I and in Experiment 2, participants completed the attribution questionnaires in the experimental rooms immediately after the competition. The questionnaires used in all four samples requested other information, but the only question of interest in this study was the attribution item which simply asked, "What is the most important reason for your team's winning or losing in today's match?"

Attribution Coding
A listing of 352 attributions would be both unwieldy and of little informational value, and therefore, a coding system was needed. Logically, a coding scheme should include the two dimensions of locus of causality (internal-external) and stability from Weiner et al.'s (1971) model and the more recently identified controllability dimension. For the locus of causality dimension, attributions were classified as something about the team or its members (internal) or something external. For example, "our teamwork was excellent" would be classified as internal and "the other team was really up for the game" would be external. Stability was defined temporally; stable attributions, such as ability or lack of ability, would not vary over future contests, whereas unstable factors, such as effort or arousal level, could vary over time. Attributions under the direct control of the team or its members were classified as controllable in contrast to uncontrollable attributions. In the Elig and Frieze (1975) coding scheme, factors under the control of others, as well as those under the control of the

performer, are classified as controllable. The current system, however, defined controllability from the performer's perspective. Only causes under the direct volitional control of the individual respondent or that team were considered controllable. Such classification seems in line with both an intuitive understanding of controllability and theoretical implications. According to Weiner (1979) and most attribution theorists, controllability affects the evaluation of the performer by others.

Others tend to positively evaluate those performers who succeed because of controllable factors (e.g., effort) and negatively evaluate peformers who fail because of controllable factors. On the other hand, we seldom criticize a student who fails because of a teacher's lack of effort or a team that loses because of biased officiating.

In addition to the three theory-based dimensions, attributions were classified according to whether they referred to the self (the individual making the attribution), to teammates, to the team as a whole, or to other factors. Attributions were also sorted into specific categories, logically derived from previous studies and from the obtained responses.

Each attribution was written on one side of an index card and numbered on the reverse side to allow for blind coding. Two graduate students sorted all of the attributions once for each dimension (locus of causality, stability, controllability, selfteammate-team-other) and each classification was independent of all others. Initial agreement between the two coders was high, ranging from $81^{0}10$ on the stability classification to $90^{0}10$ on the controllability classification, $96^{0}10$ on the locus of causality classification, and 97% on the self-teammate-team-other classification. Disagreements were discussed and in all cases were resolved within a few minutes.

Results

Responses were examined separately for each sample, but because of small cell frequencies only the major analysis, which used the combined responses across all samples, can be considered reliable. A loglinear analysis, which allows examination of frequency or categorical data in multiple dimensions, was used (see Baker, 1981, or Feinberg, 1977, for a discussion of loglinear analyses). The design component of the loglinear analysis involves a simple comparison of the attributions of winners and losers. The more complicated aspect of the analysis involves the attribution response, which is a categorical variable. Furthermore, the categorization is not a simple one-way categorization, but a three-dimensional categorization. A loglinear analysis allows examination of separate effects in a multidimensional response, similar to main effects and interactions in factorial designs. With the three- dimensional (2 x 2 x 2) response categorization of this study, eight combinations (internal-stable-uncontrollable, etc.) are possible and that should yield seven effects: three main effects (locus, stability, controllability), three two-way interactions (locus x stability, locus x controllability, stability x controllability), and one triple interaction (locus x stability x controllability).

The current study, however, posed another problem. In the coding system an attribution could not possibly be both external and controllable (only an internal attribute can be controlled). Thus, the two external-controllable cells are necessarily empty cells, and only six combinations are really possible. The overall response effect, then, has only five degrees of freedom and neither the triple interaction nor the locus by controllability interaction can be tested. The overall loglinear analysis includes a test of response effects (whether all possible combinations of attribution categories are used equally) which relates to the first research question of this study (what types of causal explanations are given in team competition?). The design by response component of the loglinear analysis then tests whether winners and losers use the same attribution categories, the second question of interest in this research.

Table 1

Loglinear Analysis Summary

Effect	df	Chi-Square	*p*
Response	5	537.39	.001
Locus	1	19.58	.001
Stability	1	.24	
Controllability	1	324.95	.001
Locus × stability	1	9.67	.01
Stability × controllability	1	15.80	.001
Win/loss × response	5	26.00	.001
Win/loss × locus	1	.28	
Win/loss × stability	1	1.09	
Win/loss × controllability	1	14.67	.001
Win/loss × locus × stability	1	.13	
Win/loss × stability × controllability	1	5.61	.02

The summary of the loglinear analysis in Table 1 indicates first, a response effect. All possible categories were *not* used equally, some types of attributions were used more than others. Second, the significant win/loss by response effect indicates that winners and losers used response categories differently. The next logical step is to break the overall response and win/loss by response effects into dimensions and interactions.

Significant differences were revealed for four of the five response effects (all but the stability main effect). The frequencies for the main attribution dimensions indicate that, overall, attributions were predominantly internal (301) rather than external (51), unstable (220) rather than stable (132), and controllable (219) rather than uncontrollable (133). In terms of statistical significance, the controllability effect was strongest, locus was also highly significant, but the stability effect was nonsignificant. The statistical results may seem illogical if the reader notes that the internal- external difference is larger than the other two, which are nearly identical. Loglinear analysis, however, considers all response effects simultaneously, and the unique contribution of the controllability effect is greater than the contributions of internality and stability.

The two interaction response effects were also significant, with attributions tending to fall into the unstable-internal and unstable-controllable categories. Although most attributions were internal, the locus by stability interaction reflected the fact that unstable, internal attributions (201) were given twice as often as stable, internal attributions (100), but stable, external attributions (32) were somewhat more common than unstable, external attributions (19). Similarly, unstable, controllable attributions (159) were much more frequent than stable, controllable attributions (60), whereas unstable, uncontrollable (61) and stable, uncontrollable attributions (72) were given equally. To summarize the response effects, persons tended to make internal, unstable, controllable attributions. Although that observed tendency may be interesting, it is not very profound; the more enlightening part of the analysis is the win/loss by response effect.

The primary win/loss difference occurred for the controllability dimension. Members of winning teams gave predominantly controllable (131) rather than uncontrollable (46) attributions, whereas members of losing teams gave controllable (88) and uncontrollable (87) attributions equally. The analysis also revealed a further win/loss difference on the stability by controllability interaction. Overall, winners used more controllable attributions than losers, but as the frequencies in Table 2 show, winners especially used unstable, controllable attributions more than losers.

As noted earlier, attributions were also classified as referring to the self, teammates, the team as a whole, or other factors. Overwhelmingly, attributions referred to the team as a whole, and this pattern held for both winning and losing team members. A one-way chi-square indicated that the tendency to use team attributions

(281 or 80^{0}7o of the 352 attributions) was significant, X' (3) = 5.72.16, p<.001, but a win/loss by self-teammates-team-other classification chi-square was nonsignificant.

Because the study was exploratory, the specific attributions that persons used were of interest. Seven specific categories were developed, mainly by going through the attributions, and also by using the suggestions of previous researchers (e.g., Roberts & Pascuzzi, 1979). Table 3 lists the seven categories and frequencies of their use by winners and losers. Teamwork (or lack of teamwork), which included responses such as working together and coordination, was by far the most frequently used attribution. A separate category for affiliation or cohesiveness responses, such as getting along with each other, was originally planned, but so few people gave those attributions that those few were included within the teamwork category. Mood/arousal included such things as team spirit, anxiety, fatigue, and frustration. Very few people specifically gave an effort attribution, so effort was categorized with competitive attitude, which included confidence, concentration, and being competitive. Ability, practice/experience and opponent ability/task difficulty, which were classified together because so few people gave task attributions, are self-explanatory, and luck included a few miscellaneous unpredictable events, such as "our van broke down," along with standard luck attributions. Not all attributions within a specific category necessarily represented the same dimensional classifications, however. For example, the statements, "we're the better team" and "we were the better team today" both refer to ability, but the former would be classified as stable and the latter as unstable.

A loglinear analysis of the specific categories yielded both a response or category effect, X' (6) = 89.02, p<.001, and a win/loss by response effect, X' (6) = 33.56, p <.001. The predominance of teamwork attributions is reflected in the response effect, and the most notable win/loss difference also occurs for the teamwork

Table 2

Win/Loss by Stability by Controllability Frequencies

	Win		Loss	
	Stable	Unstable	Stable	Unstable
Controllable	30	101	30	58
Uncontrollable	31	15	41	46

Table 3

Frequencies for Specific Attributions

Category	Win	Loss
Teamwork	83	36
Mood/arousal	17	22
Competitive attitude/effort	26	28
Ability	23	25
Practice/experience	8	28
Opponent/task	15	21
Luck	5	15

category, which was used more than twice as often by winners as losers. Members of losing teams did use teamwork attributions, but also divided their attributions among the other categories more than winners did. Losers used the external attributions of luck and task difficulty more than winners, as previous research would suggest, but even losers gave predominantly internal attributions; the external categories simply were not used much at all.

Although only combined results are reported, the attribution patterns were quite consistent across samples. Small cell frequencies precluded complete loglinear analyses of each sample, but chi-square analyses revealed a

significant win/loss by controllability effect (the primary design effect) for all but the intramural volleyball sample, and even there a similar pattern was observed. In Experiment 2, which included both males and females, no sex differences were found for any attribution dimensions, although the win/loss by controllability effect was stronger for males than females. In general, attribution patterns and win/loss differences were consistent across samples.

Discussion

The current findings revealed an emphasis on internal, unstable, controllable attributions in team competition, with specific references to teamwork especially common. The predominance of internal attributions and the relative unimportance of the external attributions of luck and task difficulty concur with previous sport attribution research (Bukowski & Moore, 1980; Lau & Russell, 1980; Scanlan & Passer, 1980), but the trends are especially striking in the current results. The present study also revealed that few of the specific attributions given by team competitors could be classified as ability, effort, luck, or task difficulty. This observation supports the findings of Roberts and Pascuzzi (1979) and points out the inadequacy of limiting attribution assessment to the four traditional causes. Most of the theoretical relationships and predictions within the achievement behavior and competition areas are based on the dimensions rather than specific attributions anyway, and therefore, limiting responses to the four standard causes may not be the most reasonable research strategy.

The use of open-ended responses and subsequent classification along dimensions, as in the current study, is one alternative, but not necessarily the best alternative in all cases. The open-ended format does not guarantee adequate assessment of the respondent's cognitive state; any coding system is arbitrary to some extent; and as Elig and Frieze (1979) note, the open-ended format is psychometrically weaker than more structured responses.

The often ambiguous wording of open-ended attributions and the potential for misinterpretation is a major problem when attributions are classified along dimensions to examine predicted relationships. If researchers wish to examine the relationship of attributions to theoretically related constructs and behaviors, they might ask the *respondent* to classify the causal explanation along the three causal dimensions. Russell (in press) has recently advocated such direct assessment and developed the Causal Dimension Scale to assess individuals' perceptions of the causes of success and failure in terms of locus of causality, stability, and controllability. Use of the Causal Dimension Scale and respondent coding could reduce misinterpretation and permit more valid examination of causal attributions and associated cognitive, affective, and behavioral consequences.

Differences in the causal explanations of winners and losers were revealed in the current study, but those differences were not completely consistent with previous findings. Winners were not more internal than losers, as previous studies have found, because everyone gave mainly internal attributions. Instead, the main difference was the greater use of controllable attributions by winners. Perhaps the influence of win-loss on the internality of attributions has been exaggerated in our conventional sport attribution research. Few previous studies have included the controllability dimension or used attribution measures that could separate controllability from locus of causality.

The observed win/loss differences may reflect a greater emphasis on effort (the primary internal, controllable attribution) than ability in sport. Effort is the primary judgment criteria in sport achievement and ability receives less emphasis than in academic achievement settings. Common bits of coaching wisdom and locker room slogans attest to the fact that lack of ability is not considered shameful in sport, whereas failing to give 1001/4 effort is definitely frowned upon. The current findings indicate that losers were not adverse to making ability attributions, and Scanlan (1977) reported that losing competitors placed more emphasis on ability attributions than winners. Effort attributions per se did not differentiate winners and losers in the current study, but teamwork, which is also a controllable attribution, was a primary differentiating factor. Quite possibly teamwork is a team-referent version of effort; certainly teamwork is the most prevalent team-referent controllable attribution.

In any event, the current findings suggest further investigation of controllability as a promising research direction whether open-ended or structured responses are used. Furthermore, controllability is not the only additional dimension that warrants consideration in classifying sport attributions. Abramson, Seligman, and Teasdale (1978) identified a globality dimension, differentiating task-specific attributions from general trait influences, and Weiner (1979) notes that other logically or empirically derived dimensions may emerge in varying situations.

Structured attribution items could be constructed based on the current and previous findings to guarantee adequate assessment of the three causal dimensions or additional ones in a team competition context and to probe some of the issues raised in this exploratory investigation. Also, there is still room for exploratory investigations of sports attributions, especially in team competition. The predominance of teamwork and other team-referent attributions merits further investigation; perhaps team attributions can be delineated further. More probing investigations of specific team attributions may provide information that is not apparent in a dimensional analysis, and that information may prove useful in understanding team achievement behavior, intrateam relationships, and other aspects of team dynamics.

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